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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,565	03/28/2001	Hajime Amano	109102	2851
25944	7590	06/15/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,565

Applicant(s)

AMANO ET AL.

Examiner

Paul D Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-12, 15-18, 20, 21 and 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 14, 19, 22 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/7/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to the election of species filed on 4/26/2004.

Response to the Election of Species

1. Applicant's election with traverse of Species BBC, claims 13, 14, 19, 22 and 26, in the reply filed on 4/26/04 is acknowledged. The traversal is on the ground that all the claims as filed would not require additional searching, not place any undue burden on the patent office. This is not found persuasive because these species are distinct for the reasons given last office action on Paper No. 5 such as Species A shown in FIG. 1, the first ferromagnetic film constituting the free layer, the electrically conductive film and the second ferromagnetic film constituting the pinned layer, and Species B shown in FIG. 2, the first ferromagnetic film constituting the pinned layer, the electrically conductive film and the second ferromagnetic film constituting the free layer, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore **made FINAL**.

2. Claims 1-12, 15-18, 20, 21 and 23-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/26/2004.

Specification

3. The abstract of the disclosure is objected to because the abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 13, 14, 19, 22 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 13 the phrase "after a completion of a film making process for forming a previous film of two films to be formed successively, but before an initiation of a film making process for forming a succeeding film of said two films" as recited on lines 11-13 renders the claim vague and indefinite. It is unclear as to what the previous film of two films recited in lines 11-12 and the succeeding film of said two films are indicated. What are the two films? Are the undercoat film and the antiferromagnetic film or the first ferromagnetic film and electrically conductive film?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 13 and 26 are, as best understood in view of the rejections under 112 second paragraphs, rejected under 35 U.S.C. 102(e) as being anticipated by Hasegawa (US PAT. 6,700,756).

In Figs. 12 and 13 Hasegawa teaches a process of making a spin valve element comprising steps of: forming an undercoat film (31) on a substrate (not shown); forming an antiferromagnetic film (22) on said undercoat film; forming, on said antiferromagnetic film, a first ferromagnetic film (23) serving as a pinned layer; forming an electrically conductive film (24) on said first ferromagnetic film; and forming, on said electrically conductive film, a second ferromagnetic film (25) serving as a free layer (see also col. 1, lines 63-67). Also, Hasegawa teaches that an anisotropic magnetic field of the spin valve film is decreased by interrupting a film making process such as annealing. Joule heat generated by the sensing current decreases the exchange anisotropic magnetic field (see also, col. 3, line 33 to col. 5, line 19).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa, and further in view of Applicant Admitted Prior Art (AAPA).

Hasegawa teaches all of the limitations as set forth above except sputtering process to form the films of the spin valve film. Applicant Admitted Prior Art (AAPA) is described that upon manufacturing the spin valve film, the substrate is introduced into a sputtering vacuum chamber, and the films of the spin valve film are continuously formed by changing targets within the sputtering vacuum chamber on paragraph [0008] of page 2 of the specification. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a fabricating process of spin valve element of Hasegawa by sputtering in the vacuum chamber as taught by Applicant Admitted Prior Art (AAPA) in order to form the films uniformly on the substrate.

Allowable Subject Matter

10. Claims 19 and 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356.

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The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Examiner
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